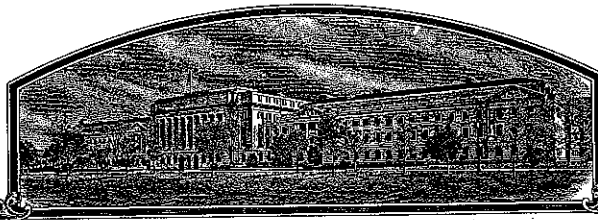


No.

200500171



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Rutgers, The State University of New Jersey

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

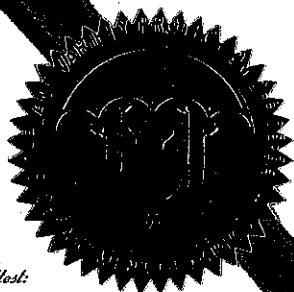
NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

FESCUE, TALL

'Falcon IV'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twentieth day of August, in the year two thousand and eight.

Attest:



*[Signature]*

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*[Signature]*

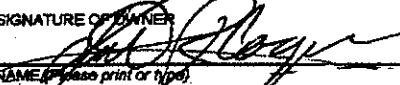
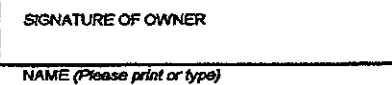
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**  
(Instructions and information collection burden statement on reverse)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                 |                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1. NAME OF OWNER<br><br>- Dr. William Meyer<br>c/o Rutgers University<br><b>Rutgers, The State University of New Jersey</b><br>(BT: 2/1/2006)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                 | 2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME<br><br>F4                                                                                                                                                                                                                                                                                       | 3. VARIETY NAME<br><br>Falcon IV                                                                                                            |
| 4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)<br><br>Foran Hall<br>Plant Biology & Pathology<br>59 Dudley Road<br>New Brunswick, NJ<br>08901                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                 | 5. TELEPHONE (Include area code)<br><br>732-932-9711 ext. 160                                                                                                                                                                                                                                                                                 | FOR OFFICIAL USE ONLY<br><br>PVPO NUMBER<br><br><b>200500171</b>                                                                            |
| 6. FAX (Include area code)<br><br>732-932-9441                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                 | FILING DATE<br><br><b>March 2, 2005</b>                                                                                                                                                                                                                                                                                                       |                                                                                                                                             |
| 7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.)<br><br>Government Institution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8. IF INCORPORATED, GIVE STATE OF INCORPORATION | 9. DATE OF INCORPORATION                                                                                                                                                                                                                                                                                                                      |                                                                                                                                             |
| 10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers.)<br><br>Dr. William Meyer<br>c/o Rutgers University<br>Plant Biology & Pathology Dept.<br>59 Dudley Road<br>New Brunswick, New Jersey<br>08901                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                 |                                                                                                                                                                                                                                                                                                                                               | F E E S<br>R E C E I V E D<br>FILING AND EXAMINATION FEES:<br>\$ 3652<br>DATE 3/2/2005<br>CERTIFICATION FEE:<br>\$ 768.00<br>DATE 8/12/2008 |
| 11. TELEPHONE (Include area code)<br><br>732-932-9711 Ext. 160                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 12. FAX (Include area code)<br><br>732-932-9441 | 13. E-MAIL                                                                                                                                                                                                                                                                                                                                    | 14. CROP KIND (Common Name)<br><br>Tall Fescue                                                                                              |
| 15. GENUS AND SPECIES NAME OF CROP<br><br>Festuca arundinacea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 16. FAMILY NAME (Botanical)<br><br>Poaceae      | 17. IS THE VARIETY A FIRST GENERATION HYBRID?<br><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO                                                                                                                                                                                                                          |                                                                                                                                             |
| 18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)<br><br>a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety<br>b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness<br>c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety<br>d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional)<br>e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership<br>f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)<br>g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office) |                                                 | 19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)<br><input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (If "no", go to item 22)                                                   |                                                                                                                                             |
| 20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO THE NUMBER OF CLASSES?<br>IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                 | 21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?<br>IF YES, SPECIFY THE <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED NUMBER 1,2,3, etc.<br>(If additional explanation is necessary, please use the space indicated on the reverse.) |                                                                                                                                             |
| 22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U.S. OR OTHER COUNTRIES?<br><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO<br>IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                 | 23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)?<br><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO<br>IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)      |                                                                                                                                             |
| 24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.<br><br>The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.<br><br>Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.                                                                                                                                                                                    |                                                 |                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                             |
| SIGNATURE OF OWNER<br><br><br>NAME (Please print or type)<br>Dr. Keith Cooper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                 | SIGNATURE OF OWNER<br><br><br>NAME (Please print or type)                                                                                                                                                                                                 |                                                                                                                                             |
| CAPACITY OR TITLE<br>Acting Executive Dean                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                 | CAPACITY OR TITLE<br>DATE 1/10/5                                                                                                                                                                                                                                                                                                              |                                                                                                                                             |

**Exhibit A:**  
**Origin and Breeding History**  
**Falcon IV (F4) Tall Fescue**

Falcon IV (F-4) tall fescue (*Festuca arundinacea* Schreb.) is a medium maturing, dark green, medium-fine-leaved, semi-dwarf turf-type tall fescue.

The 212 parents of Falcon IV were selected from 31 maternal sources evaluated in progeny turf plots at the Rutgers Plant Science Research and Extension Farm at Adelphia, NJ from the 1998 and 1999 trials. Twenty-eight percent of the germplasm traces to a few plants selected from the University of GA State Hospital in 1977. Twenty-seven percent trace to a few plants selected from or related to Apache tall fescue. Twenty-two percent traces to several plants selected from the Princeton University campus and used in the development of Rebel tall fescue. Several of these plants were identified as having rhizomes in 1977. Eleven percent trace to plants selected from the University of Georgia, Athens, GA in 1977. Five percent trace to a plant designated LL-21 and evaluated in turf plots in 1986. Three percent traces to plants selected from or related to Arid tall fescue. Another three percent trace to several plants selected from or related to Mini Mustang tall fescue. Two percent trace to a plant selected from a park in Lexington, KY in 1979. One percent traces to a few plants selected from or related to Gazelle tall fescue.

All of the parental germplasm sources of Falcon IV tall fescue are part of a population improvement program originating from plants selected from old turfs of the United States in a germplasm collection program initiated in 1962, to plants selected from or related to Rebel tall fescue (Funk et al., 1981). Attractive clones were selected from old turfs in Birmingham, AL; Athens, Atlanta, and Milledgeville, GA; Preston, ID; Baltimore, MD; Bayonne, Jersey City, Elizabeth, Princeton, and Cape May, NJ; eastern North Carolina; Philadelphia, PA; Nashville, TN; Lexington, KY; Cincinnati, OH; Dallas, TX; and northern Mississippi. The tall fescue plants selected from old turfs were of unknown origin. All were large patches of turf surviving in stressful environments indicating that they had persisted and developed over a period of many years.

A few hundred attractive, turf-type plants were collected and established in spaced-plant nurseries and/or frequently mowed clonal evaluation trials at Rutgers University. All but a few dozen of the most promising plants were quickly discarded. The best selections were very different from

any tall fescue variety in existence at the time of collection. They produced lower-growing turfs with finer leaves, greater density, darker color, and greater tolerance of close mowing.

The most promising plants were identified by their persistence and appearance in old turfs and their performance in spaced-plant nurseries, mowed clonal evaluation tests, and single-plant progeny trials under turf maintenance. Intercrosses of the best performing plants were subjected to varying cycles of phenotypic and genotypic selection depending on their date of collection. New sources of germplasm were added to the breeding program as it became available from the continuing collection program. Each cycle of selection showed continued progress in producing lower-growing, darker green, attractive plants with improved turf performance scores. Selection was also effective in maintaining high seed yields, and good stress tolerance. Substantial progress was made in developing tall fescues with finer leaves, a lower growth profile, increased persistence under close mowing, and increased density.

Large numbers of single-plant progenies were seeded in turf evaluation trials at the Plant Science Research Farm at Adelphia, NJ in 1998 and 1999. The plants selected for progeny evaluation were selected from spaced-plant nurseries at Adelphia following varying cycles of phenotypic and genotypic selection of germplasm selected from old turfs and germplasm selected from or related to Rebel tall fescue.

Approximately 2900 tillers were selected from the best performing single-plant progeny turf plots from the 1998 and 1999 tall fescue test at Adelphia. Twenty-seven different single-plot progenies were selected from 635 plots from 9 different populations from the 1998 test and 890 plots from 8 different populations from the 1999 test. These plants were established in greenhouse flats prior to their transfer to a spaced-plant nursery in the fall of 2000 consisting of 1450 plants. Selection was based on performance records as well as appearance at the time the plants were selected from these progeny plots. Selection of plants from each progeny was based on an attractive dark green color, medium-fine leaves, abundant tillering, high shoot density and freedom from disease.

In the spring of 2001, approximately 80% of the plants were rogued prior to anthesis, leaving a population of 288 plants with a semi-dwarf growth habit, dark green color, medium-high crown densities and high seed yield potential. Approximately 75% of the remaining plants were harvested and designated as breeder seed of Falcon IV tall fescue. In the fall of 2003, 50 grams of breeder seed was sent to Advanta Seeds Pacific to include in a morphological nursery for Plant Variety Protection

measurements. These 212 plants were from 31 different single-plot progenies. Replicated turf plots of Falcon IV were established at Adelphia in the fall of 2001 and entered in the 2001 National Tall Fescue test to be tested throughout the country. Twenty pounds of breeder seed was sent to ProSeeds Inc. for foundation and certified seed increase.

#### References

1. Buckner, Robert C., Jerrell B. Powell, and Rod V. Frakes. 1979. Historical Development, in Buckner, Robert C., and Lowell P. Bush (editors) Tall Fescue. Agronomy Monograph 20. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Inc., Publishers. Madison, Wisconsin pages 1-8.
2. Funk, C.R., R.E. Engel, W.K. Dickson, and R.H. Hurley. 1981. Registration of Rebel tall fescue. Crop Sci. 21:632.

## Diagram of Origin and Breeding History of Falcon IV (F-4) Tall Fescue

### 1. 1962 to 1998

Germplasm collection, evaluation, and genetic improvement.

### 2. 1998-1999

Planted single-plant progenies of plants selected from current cycles of population improvement programs in closely mowed turf trials at Adelphia and North Brunswick, NJ.

### 3. 2000

Selected 2900 plants from 31 of the best performing single-plant progeny turf plots planted in 1998 and 1999. In the fall of 2000, 1450 selected plants were established in an isolated spaced-plant nursery at Adelphia, NJ.

### 4. 2001

Approximately 80% of this nursery was rogued leaving a population of 288 plants with a semi-dwarf growth habit, dark green color, medium-high crown densities, medium-early maturity and high seed yield potential. Approximately 25% of the plants were not harvested due to poor floret fertility and/or disease susceptibility. Seed from the selected 212 plants was harvested as breeder seed of F-4 tall fescue. Replicated turf plots of Falcon IV were established at Adelphia in the fall of 2001 and entered in the 2001 National Tall Fescue test to be tested throughout the country. Twenty pounds of breeder seed was sent to ProSeeds Inc. for foundation and certified seed increase.

2. Breeder Seed Maintenance:

A breeder seed multiplication was planted in isolation in 2002 in New Brunswick, New Jersey. Seed was harvested in bulk in 2003 and is maintained in cold storage. Seed propagation is limited to three generations, one each of foundation, registered, and certified.

3. Stability and Uniformity:

Falcon IV has been a stable uniform cultivar over two generations. No off-type or variant plants have been observed during the multiplication or reproduction. Turf plots and foundation class fields of Falcon IV have been uniform and stable.  
(8/4/2006 BT)

**Exhibit B:****Novelty Statement of Falcon IV (F4) Tall Fescue**

The following summary outlines the distinctive characteristics of Falcon IV. The novelty of Falcon IV is based on the unique combination of these characteristics. Falcon IV is most similar to Rebel II, but may be differentiated by using the following criteria:

- a. The genetic color of Falcon IV is darker compared to Rebel II (tables 1A, 1B).
- b. Falcon IV has a mature plant height at least 25 cm shorter than Rebel II (tables 1A, 1B).
- c. The flag leaf characteristics for Falcon IV; height, length, sheath length and internode length are all less compared to Rebel II (tables 1A, 1B).
- d. The panicle length is at least 13 cm shorter for Falcon IV compared to Rebel II (tables 1A, 1B).
- e. The leaf blade characteristics for Falcon IV; height, length, sheath length and width are all less compared to Rebel II (tables 1A, 1B).
- f. The length of the panicle ~~form~~<sup>from</sup> the lower most whorl to the apex is shorter for Falcon IV than Rebel II (tables 2A, 2B, illus. 1).  
(lt: 6/30/2002)
- g. The lemma length and awn length are all shorter for Falcon IV compared to Rebel II (tables 2A, 2B).
- h. Falcon IV has a palea length and width that is less than Rebel II (tables 2A, 2B).
- i. Falcon IV has fewer spikelets per panicle<sup>is</sup> compared to Rebel II (tables 2A, 2B).
- j. The distance between the two lower most whorls for Falcon IV is shorter compared to Rebel II (tables 2A, 2B, illus. 1).
- k. The length of the longest branch of the lower most whorl is shorter for Falcon IV compared to Rebel II (tables 2A, 2B).
- l. Falcon IV has fewer spikelets on the longest branch of the lower most whorl compared to Rebel II (tables 2A, 2B).



Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter. Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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**U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY PROGRAM  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705**

**EXHIBIT C  
(TALL & MEADOW FESCUES)**

**OBJECTIVE DESCRIPTION OF VARIETY  
TALL & MEADOW FESCUES  
(*Festuca* spp.)**

|                                                                                                                                                                                                                 |                             |                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------------------------------------|
| NAME OF APPLICANT(S)<br><del>Rutgers University</del> <b>Rutgers, The State University of New Jersey</b><br>(BT: 8/4/2006)                                                                                      | TEMPORARY DESIGNATION<br>F4 | VARIETY NAME<br>Falcon IV                                |
| ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)<br>Rutgers University - Cook College<br>Foran Hall<br>Plant Biology and Pathology Dept.<br>59 Dudley Road<br>New Brunswick, New Jersey 08901 |                             | FOR OFFICIAL USE ONLY<br>PVPO NUMBER<br><b>200500171</b> |

Place the appropriate number that describes the varietal characteristics of this variety in the boxes below. Use leading zeroes when necessary (e.g. 089). Characteristics described, including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACED PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characteristics marked with an asterisk \* are characteristics which should be recorded.

**\* 1. SPECIES: (With comparison varieties, use varieties within the species of the application variety)**

  X   1 = *F. arundinacea* (Tall)

**Turf Types**

1 = Kentucky 31   2 = Rebel   3 = Olympic   4 = Bonanza   5 = Arid   6 = Rebel II  
7 = Shortstop   8 = Silverado   9 = Rebel Jr.   10 = Mini Mustang   11 = Crewcut   12 = Bonsai

**Forage Types**

20 = Kentucky 31   21 = Martin   22 = Forager   23 = Mozark  
24 = Kenhy   25 = AU Triumph   26 = Fawn   27 = Cajun

       2 = *F. pratensis* (Meadow)

30 = Admira   31 = Beaumont   32 = Comtessa   33 = Ensign   34 = Trader

**\* 2. CYTOLOGY:**

       42        Chromosome Number

**3. ADAPTATION: (0 = Not Tested; 1 = Not Adapted; 2 = Adapted)**

  2   Transition Zone     2   West     2   Northeast          Other (Specify): \_\_\_\_\_

**\* 4. MATURITY: (Date First Headed, 10% of Panicle Emergence)**

  5   Maturity Class   1 = Very early (   )   2 = AU Triumph   3 = Early (Fawn)   4 = K31, Kenhy   5 = Medium (Rebel)

4. MATURITY: (continued)

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6 = Bonanza

7 = Late (Silverado)

8 = ( )

9 = Very late

Date Headed 25.25 days after April 1, \_\_\_\_\_

Location Albany, OR \_\_\_\_\_

\_\_\_\_\_ Days earlier than \_\_\_\_\_  
 Maturity same as 6  
 \_\_\_\_\_ Days later than \_\_\_\_\_  
 } Comparison Variety

\* 5. MATURE PLANT HEIGHT CM: (Average of 100 culms from crown to top of panicle, if panicle is nodding, straighten)

\* INTERNODE LENGTH CM: (First internode subtending the flag leaf)

87.60 cm Height  
 25.93 cm Shorter than 6  
 Height same as \_\_\_\_\_  
 \_\_\_\_\_ cm Taller than \_\_\_\_\_  
 } Comparison Variety

14.63 cm InternodeLength  
 7.80 cm Shorter than 6  
 Length same as \_\_\_\_\_  
 \_\_\_\_\_ cm Longer than \_\_\_\_\_  
 } Comparison Variety

\* HEIGHT AT EAR EMERGENCE CM: (Flag leaf height from crown to flag leaf node)

35.45 cm Height  
 18.93 cm Shorter than 6  
 Height same as \_\_\_\_\_  
 \_\_\_\_\_ cm Taller than \_\_\_\_\_  
 } Comparison Variety

\* 6. GROWTH HABIT: (Mature Plants)

7 1 = Prostrate ( ) 3 = Semiprostrate ( ) 5 = Horizontal ( )  
 7 = Semierect (Rebel) 9 = Erect (Mini Mustang)

\* 7. RHIZOMES (Psuedo):

\_\_\_\_\_ mm Length 2 1 = Absent ( ) 2 = Rare (Rebel) 3 = Common ( )

\* 8. LEAF BLADE: (Tiller leaves/ turf color)

\* 6 Color: 1 = Light green ( ) 3 = Medium light green ( ) 5 = Green ( )  
 7 = Medium dark green ( ) 9 = Very dark green ( )

4 Specify rating of comparison variety

\* 1 Anthocyanin: 1 = Absent ( ) 9 = Present ( )

\* 1 Basal Hairs: 1 = Absent ( ) 9 = Present ( )

\* 9 Margins: 1 = Smooth ( ) 5 = Semi-rough ( ) 9 = Rough ( )

(BT: 8/4/06)

## 8. LEAF BLADE: (continued)

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\* 5 Width Class: 1 = Very coarse ( ) 3 = Coarse ( ) 5 = Medium ( )  
7 = Fine ( ) 9 = Very Fine ( )

\* TILLER LEAF LENGTH CM: (First leaf subtending the flag leaf)

\* TILLER LEAF WIDTH MM:

22.15 cm Tiller Leaf Length  
11.13 cm Shorter than 6  
Length same as \_\_\_\_\_  
\_\_\_\_\_ cm Taller than \_\_\_\_\_  
Comparison Variety

7.00 mm Tiller Leaf Width  
1.35 mm Narrower than 6  
Width same as \_\_\_\_\_  
\_\_\_\_\_ mm Longer than \_\_\_\_\_  
Comparison Variety

FLAG LEAF LENGTH CM:

FLAG LEAF WIDTH MM:

30.23 cm Flag Leaf Length  
12.27 cm Shorter than 6  
Length same as \_\_\_\_\_  
\_\_\_\_\_ cm Longer than \_\_\_\_\_  
Comparison Variety

5.25 mm Flag Leaf Width  
0.93 mm Narrower than 6  
Width same as \_\_\_\_\_  
\_\_\_\_\_ mm Wider than \_\_\_\_\_  
Comparison Variety

\* 9. LEAF SHEATH: (Basal Portion)

\* 1 Anthocyanin (seedling): 1 = Absent (K31) 9 = Present ( )  
\* 9 Auricle Hairiness: 1 = Absent ( ) 9 = Present ( )

\* 10. PANICLE: (At seed maturity except where noted.)

\* 3 Shape: 1 = Narrow-tapering ( ) 5 = Ovate ( ) 7 = Oblong ( ) 9 = Other (specify)  
\* 5 Type: 1 = Compact (appressed) 5 = Intermediate ( ) 7 = Open ( ) 9 = Other (specify)  
\* 9 Orientation: 1 = Nodding ( ) 9 = Erect ( )  
\* 1 Branch Pubescence: 1 = Glabrous ( ) 9 = Pubescent ( )  
\* 1 Anther Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green  
4 = Purplish 5 = Reddish 6 = Other (Specify)  
\* 1 Glume Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green  
4 = Purplish 5 = Reddish 6 = Other (Specify)  
\* 70.35 cm Panicle Length (from base to tip, if nodding, straighten; after anthesis)

19.73 cm Shorter than 6  
Length same as \_\_\_\_\_  
\_\_\_\_\_ cm Longer than \_\_\_\_\_  
Comparison Variety



## 13. ENVIRONMENTAL STRESS: (continued)

\_6\_ Winter Stress      1 = Susceptible ( )      5 = Tolerant ( )      9 = Resistant ( )

14. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics, indicate the degree of resemblance with the following scale:

1 = Application variety is less than comparison variety    2 = Same as    3 = More than, better, greater, darker, etc.

| Character     | Varieties | Rating | Character     | Varieties | Rating |
|---------------|-----------|--------|---------------|-----------|--------|
| Leaf Width    | Rebel II  | 1      | Leaf Color    | Rebel II  | 3      |
| Panicle Color | Rebel II  | 2      | Panicle Shape | Rebel II  | 2      |
| Seed Size     | Rebel II  | 1      | Cold Injury   | Rebel II  | 2      |
| Winter Color  | Rebel II  | 3      | Heat          | Rebel II  | 2      |
| Disease       | Rebel II  | 3      |               |           |        |

\* 15. EXPERIMENTAL: Give a brief summary of the experimental design utilized to collect the data used on this form. Cultural conditions, number of plants measured and plant spacing must be specified.

Two morphological nurseries were established in September 2003 and designated 03PVPFA1 and 03PVPFA2. Nursery 03PVPFA1 - Location 1 located in Talbot, Oregon. Nursery 03PVPFA2 - Location 2 located in Albany, Oregon. Soil profile for 03PVPFA1 - Location 1 consists of a Newberg silt loam, well drained, with a pH of 5.8. Soil profile for 03PVPFA2 - Location 2 consists of a Woodburn silt loam, medium-well drained, with a pH of 5.2.

Experimental design consisted of 11 entries; 4 replications per entry; 20 plants per replication; for a total of 80 plants per entry. Crewcut, Forte, KY-31, and Rebel II were used as standards. Plants were established on 2.5 foot centers with a skip row between replications and between entries.

The nurseries received 30 pounds of nitrogen per acre rate following establishment and 50 pounds of nitrogen per acre per year in 2004. The fertilizer source was 15 - 15 - 15 and was applied as a split application with ½ applied in the fall and ½ in the spring. The nurseries were sprayed in the spring with Quilt (2oz/acre rate), to prevent stem rust.

Data was analyzed using analysis of variance for a randomized complete block design. Means were calculated for each replication and then analyzed for tables 1A, 1B, 2A, 2B.

Tables 3A, 3B, 4A, and 4B data was analyzed using binary data confidence intervals. The confidence intervals are given for the characteristics which expressed significant differences.

**Exhibit D:**  
**Additional Description**  
**Falcon IV (F4) Tall Fescue**

Falcon IV is an improved turf-type tall fescue. It has a shorter mature plant height (tables 1A, 1B) than previously released tall fescue cultivars, such as Six Point, Crewcut, KY-31 and Rebel II, but is taller than ATF804. Falcon IV has a medium maturity with a heading date earlier than ATF804, and Crewcut (tables 1A, 1B). Falcon IV exhibits a darker genetic color compared to Crewcut, KY-31 and Rebel II, but is lighter than Cortez II and ATF804 (tables 1A, 1B). The length of the panicle from the upper most node to the apex is shorter for Falcon IV compared to KY-31 and Rebel II, but longer than ATF804 (tables 1A, 1B). The flag leaf length and the sheath length are shorter for Falcon IV compared to Crewcut, KY-31 and Rebel II, but longer than ATF804 (tables 1A, 1B). Falcon IV has a shorter flag leaf internode length compared to Six Point, Crewcut, Rebel II and KY-31 (tables 1A, 1B). The leaf blade length is shorter for Falcon IV compared to Six Point, Crewcut, KY-31 and Rebel II, but longer than ATF804 (tables 1A, 1B). Falcon IV has a shorter palea, glume, and lemma length compared to Crewcut, KY-31, and Rebel II (tables 2A, 2B). The lemma awn length of Falcon IV is shorter than Crewcut and Rebel II (tables 2A, 2B). The length of the panicle from the lower most whorl to the apex is shorter for Falcon IV compared to Crewcut, KY-31, and Rebel II (tables 2A, 2B). The number of spikelets per panicle is less for Falcon IV than KY-31 and Rebel II (tables 2A, 2B). Falcon IV has a shorter spikelet length compared to Crewcut and KY-31 (tables 2A, 2B). The distance between the two lower most whorls is shorter for Falcon IV compared to Crewcut, KY-31 and Rebel II (tables 2A, 2B, illus. 1). The length of the longest branch of the lower most whorl is shorter for Falcon IV compared to Crewcut, KY-31 and Rebel II (tables 2A, 2B, illus. 1). The milligram weight of 1,000 seeds of Falcon IV is less than Forte', ATF804, Cortez II, Crewcut, and Rebel II (tables 4A, 4B). Falcon IV expresses a higher frequency of erect plants compared to KY-31 (tables 3A, 3B). Falcon IV exhibits fewer plants with nodding panicles compared to KY-31 (tables 3A, 3B). Falcon IV has fewer plants with dark pigmentation at the nodes compared to KY-31 and Rebel II (tables 4A, 4B).

Table 1A 2004 Morphological Data - Location 1

| Cultivar  | Genetic Color (Scale: 1-9 = darkest) | Heading Date (days after April 1) | Anthesis Date (days after April 1) | Mature Plant Height (cm) | Plant Width (cm) | Panicle Length (cm) | Flag Leaf Length (cm) | Flag Leaf Width (mm) | Flag Leaf Height (cm) | Flag Leaf Sheath Length (cm) | Flag Leaf Internode Length (cm) | Leaf Blade Length (cm) | Leaf Blade Width (mm) | Leaf Blade Height (cm) | Leaf Sheath Length (cm) |
|-----------|--------------------------------------|-----------------------------------|------------------------------------|--------------------------|------------------|---------------------|-----------------------|----------------------|-----------------------|------------------------------|---------------------------------|------------------------|-----------------------|------------------------|-------------------------|
| Falcon IV | 6.45                                 | 30.25                             | 57.25                              | 87.60                    | 14.05            | 72.38               | 30.23                 | 5.38                 | 35.45                 | 20.30                        | 14.63                           | 22.15                  | 8.03                  | 10.05                  | 9.08                    |
| Six Point | 6.43                                 | 29.50                             | 57.50                              | 94.43                    | 14.38            | 74.58               | 32.23                 | 6.05                 | 40.85                 | 21.25                        | 17.13                           | 24.70                  | 8.75                  | 12.68                  | 10.28                   |
| Cortez II | 6.78                                 | 31.25                             | 58.00                              | 86.73                    | 13.13            | 69.83               | 30.53                 | 5.25                 | 37.28                 | 19.83                        | 15.30                           | 22.38                  | 7.68                  | 11.58                  | 9.70                    |
| ATF804    | 6.63                                 | 36.00                             | 62.75                              | 77.03                    | 12.20            | 62.45               | 27.70                 | 4.95                 | 33.45                 | 18.30                        | 14.50                           | 20.30                  | 7.20                  | 9.65                   | 8.83                    |
| Forte'    | 6.45                                 | 31.75                             | 58.25                              | 88.78                    | 14.30            | 70.18               | 30.30                 | 4.98                 | 39.60                 | 21.05                        | 16.15                           | 23.58                  | 7.78                  | 12.53                  | 10.20                   |
| Crewcut   | 5.23                                 | 32.75                             | 61.25                              | 98.73                    | 15.30            | 76.25               | 37.23                 | 7.00                 | 46.03                 | 23.73                        | 18.40                           | 29.28                  | 9.73                  | 15.80                  | 11.93                   |
| Rebel II  | 4.15                                 | 30.75                             | 60.25                              | 113.53                   | 15.75            | 86.20               | 42.50                 | 6.73                 | 54.38                 | 27.93                        | 22.43                           | 33.28                  | 9.88                  | 17.90                  | 13.88                   |
| KY-31     | 3.85                                 | 28.50                             | 58.25                              | 127.18                   | 15.03            | 95.23               | 46.28                 | 6.88                 | 63.98                 | 32.45                        | 24.35                           | 36.45                  | 10.30                 | 23.58                  | 16.28                   |
| LSD(0.05) | 0.16                                 | 1.86                              | 1.46                               | 4.47                     | 1.13             | 4.05                | 2.06                  | 0.61                 | 3.11                  | 1.38                         | 1.54                            | 1.81                   | 0.57                  | 1.87                   | 0.74                    |
| CV        | 2.15                                 | 4.81                              | 2.05                               | 4.00                     | 6.69             | 4.59                | 5.13                  | 8.71                 | 6.24                  | 5.16                         | 7.54                            | 5.95                   | 5.55                  | 11.85                  | 5.75                    |

Cultivar under evaluation

Significant difference over two locations one year.

Significant difference over one location one year.

Measurements taken in Talbot, Oregon

4 reps; 20 plants/rep = 80 data points

(cr:3/4/2003)

Table 1B  
2004 Morphological Data - Location 2

| Cultivar   | Genetic Color (Scale 1-9 = darkest) | Heading Date (days after April 1) | Anthesis Date (days after April 1) | Mature Plant Height (cm) | Plant Width (cm) | Panicle Length (cm) | Flag Leaf Length (cm) | Flag Leaf Width (mm) | Flag Leaf Height (cm) | Flag Leaf Sheath Length (cm) | Flag Leaf Internode Length (cm) | Leaf Blade Length (cm) | Leaf Blade Width (mm) | Leaf Blade Height (cm) | Leaf Sheath Length (cm) |
|------------|-------------------------------------|-----------------------------------|------------------------------------|--------------------------|------------------|---------------------|-----------------------|----------------------|-----------------------|------------------------------|---------------------------------|------------------------|-----------------------|------------------------|-------------------------|
| Falcon IV  | 6.20                                | 25.25                             | 54.05                              | 95.23                    | 18.20            | 70.35               | 33.80                 | 5.25                 | 45.93                 | 21.83                        | 18.08                           | 30.10                  | 7.00                  | 19.38                  | 12.13                   |
| Six Point  | 6.43                                | 23.50                             | 53.33                              | 101.23                   | 19.38            | 77.05               | 36.05                 | 4.55                 | 47.05                 | 23.50                        | 19.73                           | 32.05                  | 6.63                  | 17.58                  | 12.40                   |
| Cortez II  | 6.75                                | 24.75                             | 53.35                              | 92.55                    | 17.05            | 70.65               | 32.10                 | 3.90                 | 42.83                 | 20.98                        | 17.28                           | 29.90                  | 6.05                  | 15.53                  | 11.83                   |
| ATF804     | 6.55                                | 30.50                             | 58.40                              | 85.55                    | 16.13            | 63.95               | 29.55                 | 4.13                 | 41.75                 | 19.90                        | 17.23                           | 25.93                  | 5.88                  | 15.48                  | 11.35                   |
| Forte'     | 6.60                                | 24.00                             | 53.33                              | 96.25                    | 17.68            | 73.60               | 35.10                 | 4.18                 | 45.15                 | 22.38                        | 18.45                           | 31.45                  | 6.00                  | 16.98                  | 12.23                   |
| Crewcut    | 5.33                                | 28.25                             | 57.60                              | 107.18                   | 19.90            | 78.30               | 40.13                 | 4.70                 | 55.15                 | 25.13                        | 21.73                           | 37.88                  | 7.03                  | 23.10                  | 14.30                   |
| Rebel II   | 4.15                                | 22.50                             | 52.85                              | 126.05                   | 23.60            | 90.08               | 47.10                 | 6.18                 | 66.45                 | 29.73                        | 26.15                           | 42.23                  | 8.35                  | 27.70                  | 16.33                   |
| KY-31      | 3.60                                | 21.00                             | 51.63                              | 141.85                   | 22.90            | 95.50               | 50.73                 | 6.25                 | 76.83                 | 34.60                        | 28.93                           | 47.70                  | 9.58                  | 35.93                  | 20.25                   |
| LSD (0.05) | 0.26                                | 2.22                              | 1.24                               | 5.25                     | 1.74             | 4.43                | 2.58                  | 0.97                 | 3.83                  | 1.44                         | 1.39                            | 1.72                   | 0.94                  | 3.02                   | 0.74                    |
| CV         | 3.60                                | 7.06                              | 1.88                               | 4.36                     | 7.70             | 4.98                | 5.90                  | 16.95                | 6.45                  | 5.07                         | 5.86                            | 4.36                   | 11.31                 | 12.79                  | 4.71                    |

Cultivar under evaluation

Significant difference over two locations one year.

Significant difference over one location one year.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points



Table 2A 2004 Laboratory Morphological Data - Location 1

| Cultivar  | Lemma Length (mm) | Lemma Width (mm) | Lemma Awn Length (mm) | Palea Length (mm) | Palea Width (mm) | Glume Length (mm) | Length of Panicle from Lower Most Whorl to Tip (mm) | Spikelets per Panicle | Florets per Spikelet | Spikelet Length (mm) | Length of Longest Whorl (mm) | Distance Between Lower Most Whorls (mm) | Number of Spikelets on the Longest Whorl |
|-----------|-------------------|------------------|-----------------------|-------------------|------------------|-------------------|-----------------------------------------------------|-----------------------|----------------------|----------------------|------------------------------|-----------------------------------------|------------------------------------------|
| Falcon IV | 5.63              | 1.45             | 1.45                  | 6.25              | 1.25             | 4.53              | 194.33                                              | 76.25                 | 7.50                 | 12.88                | 89.95                        | 53.60                                   | 13.00                                    |
| Six Point | 5.60              | 1.45             | 1.25                  | 6.10              | 1.33             | 4.45              | 211.48                                              | 84.00                 | 8.25                 | 12.93                | 97.38                        | 55.58                                   | 14.75                                    |
| Cortez II | 5.43              | 1.40             | 1.38                  | 5.95              | 1.23             | 4.48              | 190.18                                              | 75.25                 | 8.00                 | 12.90                | 86.63                        | 50.78                                   | 13.25                                    |
| ATF804    | 5.38              | 1.38             | 1.30                  | 6.00              | 1.23             | 4.48              | 184.70                                              | 67.50                 | 7.75                 | 12.58                | 87.33                        | 51.38                                   | 11.50                                    |
| Forte     | 5.38              | 1.35             | 1.43                  | 6.00              | 1.28             | 4.58              | 202.78                                              | 79.75                 | 7.75                 | 12.65                | 96.63                        | 54.90                                   | 14.00                                    |
| Crewcut   | 5.98              | 1.45             | 1.70                  | 6.63              | 1.30             | 5.10              | 254.85                                              | 97.75                 | 8.50                 | 14.40                | 121.00                       | 68.15                                   | 18.00                                    |
| Rebel II  | 6.13              | 1.53             | 1.70                  | 6.75              | 1.33             | 5.33              | 268.53                                              | 95.50                 | 7.50                 | 13.38                | 116.50                       | 66.48                                   | 15.75                                    |
| KY-31     | 6.10              | 1.43             | 1.50                  | 6.88              | 1.33             | 5.20              | 287.08                                              | 99.50                 | 7.50                 | 13.85                | 115.95                       | 73.40                                   | 14.00                                    |
| LSD(0.05) | 0.32              | 0.08             | 0.18                  | 0.22              | 0.07             | 0.25              | 15.17                                               | 7.88                  | 0.68                 | 0.72                 | 8.96                         | 3.75                                    | 2.10                                     |
| CV        | 4.71              | 4.90             | 10.39                 | 2.89              | 4.50             | 4.43              | 5.86                                                | 7.88                  | 7.32                 | 4.62                 | 7.69                         | 5.48                                    | 12.28                                    |

■ Cultivar under evaluation

■ Significant difference over two locations one year.

■ Significant difference over one location one year.

Measurements taken in Talbot, Oregon

4 reps; 20 plants/rep = 80 data points

Table 2B 2004 Laboratory Morphological Data - Location 2

| Cultivar  | Lemna Length (mm) | Lemna Width (mm) | Lemna Awn Length (mm) | Palea Length (mm) | Palea Width (mm) | Glume Length (mm) | Length of Panicle from Lower Most Whorl to Tip (mm) | Spikelets per Panicle | Florets per Spikelet | Spikelet Length (mm) | Length of Longest Whorl (mm) | Distance Between Lower Most Whorls (mm) | Number of Spikelets on the Longest Whorl |
|-----------|-------------------|------------------|-----------------------|-------------------|------------------|-------------------|-----------------------------------------------------|-----------------------|----------------------|----------------------|------------------------------|-----------------------------------------|------------------------------------------|
| Falcon IV | 5.23              | 1.50             | 1.53                  | 5.93              | 1.23             | 4.45              | 215.45                                              | 91.75                 | 6.50                 | 11.53                | 94.28                        | 53.75                                   | 15.75                                    |
| Six Point | 5.10              | 1.43             | 1.43                  | 5.95              | 1.23             | 4.33              | 218.28                                              | 95.75                 | 6.50                 | 11.43                | 96.33                        | 55.88                                   | 17.00                                    |
| Cortez II | 4.95              | 1.45             | 1.50                  | 5.80              | 1.23             | 4.33              | 197.85                                              | 84.25                 | 7.00                 | 11.40                | 86.03                        | 50.03                                   | 16.25                                    |
| ATF804    | 5.00              | 1.45             | 1.38                  | 5.83              | 1.23             | 4.30              | 185.40                                              | 74.25                 | 6.75                 | 11.30                | 83.40                        | 47.18                                   | 13.00                                    |
| Forte     | 5.00              | 1.48             | 1.48                  | 5.83              | 1.23             | 4.18              | 209.90                                              | 90.25                 | 6.25                 | 10.93                | 92.55                        | 52.63                                   | 15.75                                    |
| Crewcut   | 5.75              | 1.55             | 1.88                  | 6.55              | 1.28             | 5.00              | 256.05                                              | 96.50                 | 7.00                 | 12.63                | 112.75                       | 64.70                                   | 16.75                                    |
| Rebel II  | 5.70              | 1.55             | 1.73                  | 6.55              | 1.35             | 4.80              | 272.58                                              | 111.00                | 6.25                 | 12.20                | 114.43                       | 64.28                                   | 18.75                                    |
| KY-31     | 5.60              | 1.50             | 1.58                  | 6.70              | 1.30             | 4.95              | 299.45                                              | 117.75                | 6.50                 | 12.58                | 119.93                       | 71.55                                   | 16.50                                    |
| LSD(0.05) | 0.17              | 0.08             | 0.12                  | 0.21              | 0.06             | 0.22              | 11.53                                               | 9.18                  | 0.63                 | 0.71                 | 7.85                         | 3.10                                    | 2.64                                     |
| CV        | 2.68              | 4.52             | 6.42                  | 2.94              | 3.92             | 4.15              | 4.34                                                | 8.11                  | 7.92                 | 5.15                 | 6.88                         | 4.69                                    | 13.38                                    |

Cultivar under evaluation

Significant difference over two locations one year.

Significant difference over one location one year.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

### Panicle Type Inflorescence

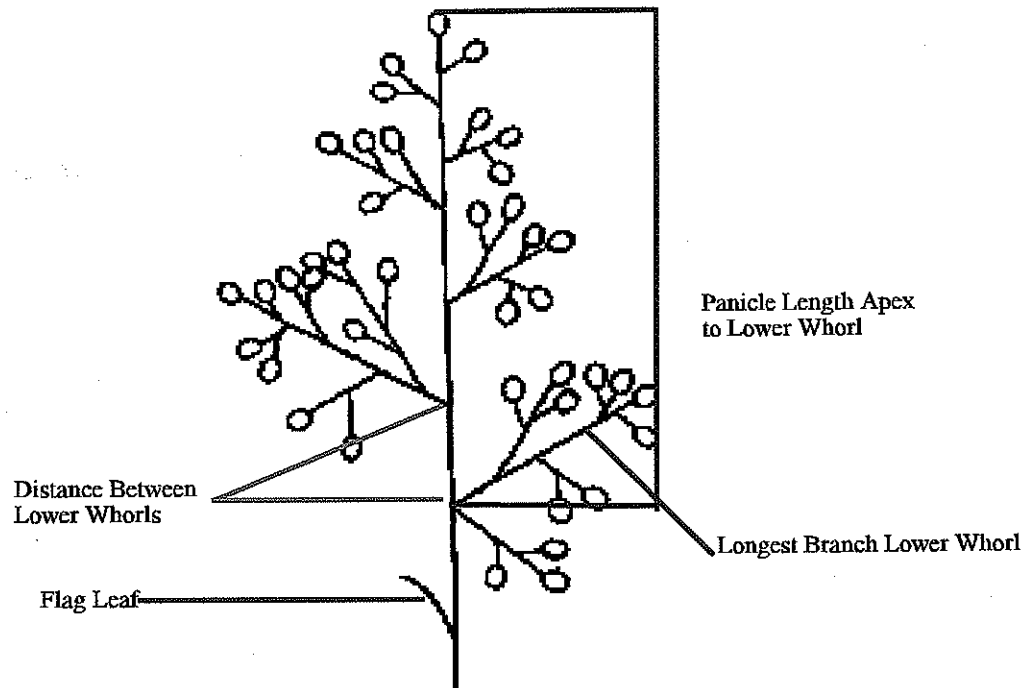


Illustration 1.

Table 3A 2004 Additional Morphological Measurements of the Panicle - Location 1

| Cultivar  | Growth Habit at Anthesis<br>% Prostrate | Growth Habit at Anthesis<br>% Semi-Erect | Growth Habit at Anthesis |                          |          | Anther Color<br>% Purple | Panicle Color<br>% Purple | Lemma Awn<br>% Present | Glume Color<br>% Purple | Panicle Orientation |                     |          | Panicle Shape<br>% Ovate | Panicle Type<br>% Open | Panicle Branch Lower Whorl |                            |                            | Panicle Branch Pubescence<br>% Present |
|-----------|-----------------------------------------|------------------------------------------|--------------------------|--------------------------|----------|--------------------------|---------------------------|------------------------|-------------------------|---------------------|---------------------|----------|--------------------------|------------------------|----------------------------|----------------------------|----------------------------|----------------------------------------|
|           |                                         |                                          | % Erect                  | Growth Habit at Anthesis |          |                          |                           |                        |                         | % Nodding           | Panicle Orientation |          |                          |                        | Panicle Branch Lower Whorl | Panicle Branch Lower Whorl | Panicle Branch Lower Whorl |                                        |
|           |                                         |                                          |                          | Lower CI                 | Upper CI |                          |                           |                        |                         |                     | Lower CI            | Upper CI |                          |                        |                            |                            |                            |                                        |
| Falcon IV | 0                                       | 65                                       | 35                       | 0.245                    | 0.455    | 1                        | 6                         | 100                    | 1                       | 1                   | 0.000               | 0.032    | 26                       | 26                     | 14                         | 80                         | 6                          | 0                                      |
| Six Point | 1                                       | 65                                       | 34                       | 0.236                    | 0.444    | 4                        | 5                         | 96                     | 0                       | 0                   | 0.000               | 0.000    | 36                       | 36                     | 15                         | 84                         | 1                          | 3                                      |
| Cortez II | 0                                       | 64                                       | 36                       | 0.255                    | 0.465    | 0                        | 1                         | 99                     | 0                       | 3                   | 0.000               | 0.067    | 48                       | 48                     | 21                         | 71                         | 8                          | 1                                      |
| ATF804    | 0                                       | 81                                       | 19                       | 0.104                    | 0.276    | 1                        | 0                         | 100                    | 0                       | 1                   | 0.000               | 0.032    | 50                       | 50                     | 9                          | 85                         | 6                          | 4                                      |
| Fontle    | 0                                       | 70                                       | 30                       | 0.200                    | 0.400    | 3                        | 4                         | 100                    | 0                       | 1                   | 0.000               | 0.032    | 53                       | 53                     | 15                         | 81                         | 4                          | 1                                      |
| Crewcut   | 0                                       | 81                                       | 19                       | 0.104                    | 0.276    | 1                        | 6                         | 100                    | 0                       | 8                   | 0.021               | 0.139    | 41                       | 41                     | 21                         | 78                         | 1                          | 5                                      |
| Rebel II  | 13                                      | 74                                       | 13                       | 0.056                    | 0.204    | 4                        | 13                        | 100                    | 1                       | 19                  | 0.104               | 0.276    | 41                       | 41                     | 20                         | 76                         | 4                          | 1                                      |
| KY-31     | 16                                      | 84                                       | 0                        | 0.000                    | 0.000    | 1                        | 5                         | 100                    | 0                       | 14                  | 0.064               | 0.216    | 44                       | 44                     | 13                         | 80                         | 7                          | 8                                      |
| LSD 0.05% |                                         |                                          |                          |                          |          |                          |                           |                        |                         |                     |                     |          |                          |                        |                            |                            |                            |                                        |

■ Cultivar under evaluation

■ Significant difference over two locations one year.

■ Significant difference over one location one year.

Measurements taken in Talbot, Oregon

4 reps; 20 plants/rep = 80 data points

CI = Confidence Interval

Table 3B  
2004 Additional Morphological Measurements of the Panicle - Location 2

| Cultivar  | Growth<br>Habit at<br>Anthesis<br>% Prostrate | Growth<br>Habit at<br>Anthesis<br>% Semi-Erect | Growth Habit<br>at Anthesis |             |             | Anther<br>Color<br>% Purple | Panicle<br>Color<br>% Purple | Lemma<br>Awrn<br>% Present | Glume<br>Color<br>% Purple | Panicle<br>Orientation |             |             | Panicle<br>Shape<br>% Ovate | Panicle<br>Type<br>% Open | Panicle<br>Branch<br>Lower<br>Whorl<br>=1 | Panicle<br>Branch<br>Lower<br>Whorl<br>=2 | Panicle<br>Branch<br>Lower<br>Whorl<br>>3 | Panicle<br>Branch<br>Pubescence<br>% Present |
|-----------|-----------------------------------------------|------------------------------------------------|-----------------------------|-------------|-------------|-----------------------------|------------------------------|----------------------------|----------------------------|------------------------|-------------|-------------|-----------------------------|---------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|----------------------------------------------|
|           |                                               |                                                | % Erect                     | Lower<br>CI | Upper<br>CI |                             |                              |                            |                            | % Nodding              | Lower<br>CI | Upper<br>CI |                             |                           |                                           |                                           |                                           |                                              |
| Falcon IV | 0                                             | 78                                             | 22                          | 0.129       | 0.311       | 1                           | 14                           | 98                         | 2                          | 9                      | 0.027       | 0.153       | 49                          | 49                        | 19                                        | 80                                        | 1                                         | 0                                            |
| Six Point | 0                                             | 83                                             | 18                          | 0.096       | 0.264       | 6                           | 13                           | 98                         | 3                          | 3                      | 0.000       | 0.067       | 38                          | 38                        | 24                                        | 75                                        | 1                                         | 0                                            |
| Cortez II | 1                                             | 89                                             | 10                          | 0.034       | 0.166       | 4                           | 4                            | 96                         | 4                          | 6                      | 0.008       | 0.112       | 39                          | 39                        | 39                                        | 54                                        | 7                                         | 0                                            |
| ATF-894   | 1                                             | 68                                             | 31                          | 0.104       | 0.276       | 0                           | 4                            | 90                         | 0                          | 13                     | 0.034       | 0.166       | 49                          | 49                        | 26                                        | 70                                        | 4                                         | 1                                            |
| Forte     | 3                                             | 81                                             | 16                          | 0.080       | 0.240       | 1                           | 8                            | 96                         | 1                          | 6                      | 0.008       | 0.112       | 41                          | 41                        | 15                                        | 82                                        | 3                                         | 0                                            |
| Crewcut   | 0                                             | 95                                             | 5                           | 0.002       | 0.098       | 5                           | 8                            | 99                         | 4                          | 4                      | 0.000       | 0.083       | 54                          | 54                        | 14                                        | 85                                        | 1                                         | 3                                            |
| Rebel II  | 4                                             | 81                                             | 15                          | 0.072       | 0.228       | 3                           | 6                            | 100                        | 3                          | 16                     | 0.080       | 0.240       | 33                          | 33                        | 23                                        | 76                                        | 1                                         | 1                                            |
| KY-31     | 8                                             | 89                                             | 4                           | 0.000       | 0.083       | 3                           | 6                            | 88                         | 5                          | 34                     | 0.236       | 0.444       | 38                          | 38                        | 5                                         | 90                                        | 5                                         | 4                                            |
| LSD 0.05% |                                               |                                                |                             |             |             |                             |                              |                            |                            |                        |             |             |                             |                           |                                           |                                           |                                           |                                              |

■ Cultivar under evaluation  
 ■ Significant difference over two locations one year.  
 ■ Significant difference over one location one year.  
 Measurements taken in Talbot, Oregon  
 4 reps; 20 plants/rep = 80 data points  
 CI = Confidence Interval

Table 4A 2004 Additional Morphological Measurements - Location 1

| Cultivar  | Anthocyanin Present in the Leaf Blade % Purple | Leaf Blade Margin Roughness to the Touch % Smooth | Leaf Blade Margin Roughness to the Touch % Semi-Rough | Leaf Blade Margin Roughness to the Touch % Rough | Leaf Blade Margin Hairs % Present | Leaf Sheath Auricle Hairs % Present | Rhizomes % Present | Lemna Hairs % Present | Palea Hairs % Present | % Distinct | Node Color Lower CI | Node Color Upper CI | Seed Weight (mg/1,000 seeds) |
|-----------|------------------------------------------------|---------------------------------------------------|-------------------------------------------------------|--------------------------------------------------|-----------------------------------|-------------------------------------|--------------------|-----------------------|-----------------------|------------|---------------------|---------------------|------------------------------|
| Falcon IV | 0                                              | 0                                                 | 25                                                    | 75                                               | 90                                | 100                                 | 0                  | 100                   | 100                   | 4          | 0.000               | 0.083               | 1847                         |
| Six Point | 0                                              | 0                                                 | 30                                                    | 70                                               | 95                                | 100                                 | 0                  | 100                   | 100                   | 0          | 0.000               | 0.000               | 1764                         |
| Cortez II | 0                                              | 1                                                 | 29                                                    | 70                                               | 81                                | 100                                 | 0                  | 89                    | 100                   | 3          | 0.000               | 0.067               | 2343                         |
| ATF804    | 0                                              | 0                                                 | 32                                                    | 68                                               | 78                                | 100                                 | 6                  | 94                    | 100                   | 1          | 0.000               | 0.032               | 2505                         |
| Forte     | 0                                              | 0                                                 | 24                                                    | 76                                               | 89                                | 100                                 | 0                  | 99                    | 100                   | 1          | 0.000               | 0.032               | 2725                         |
| Crewcut   | 0                                              | 1                                                 | 41                                                    | 58                                               | 93                                | 100                                 | 1                  | 100                   | 100                   | 5          | 0.002               | 0.098               | 2176                         |
| Rebel II  | 0                                              | 5                                                 | 51                                                    | 44                                               | 96                                | 100                                 | 1                  | 100                   | 100                   | 23         | 0.138               | 0.322               | 2250                         |
| KY-31     | 0                                              | 5                                                 | 56                                                    | 39                                               | 93                                | 100                                 | 0                  | 100                   | 100                   | 24         | 0.146               | 0.334               | 1893                         |
| LSD 0.05% |                                                |                                                   |                                                       |                                                  |                                   |                                     |                    |                       |                       |            |                     |                     |                              |

■ Cultivar under evaluation

■ Significant difference over two locations one year.

■ Significant difference over one location one year.

Measurements taken in Talbot, Oregon

4 reps; 20 plants/rep = 80 data points

CI = Confidence Interval

Table 4B 2004 Additional Morphological Measurements - Location 2

| Cultivar  | Anthocyanin Present in the Leaf Blade % Purple | Leaf Blade Margin Roughness to the Touch % Smooth | Leaf Blade Margin Roughness to the Touch % Semi-Rough | Leaf Blade Margin Roughness to the Touch % Rough | Leaf Blade Margin Hairs % Present | Leaf Blade Margin Hairs % Present | Leaf Sheath Auricle Hairs % Present | Rhizomes % Present | Lemna Hairs % Present | Palea Hairs % Present | % Distinct | Lower CI | Upper CI | Seed Weight (mg/1,000 seeds) |
|-----------|------------------------------------------------|---------------------------------------------------|-------------------------------------------------------|--------------------------------------------------|-----------------------------------|-----------------------------------|-------------------------------------|--------------------|-----------------------|-----------------------|------------|----------|----------|------------------------------|
| Falcon IV | 0                                              | 8                                                 | 62                                                    | 30                                               | 94                                | 100                               | 100                                 | 1                  | 100                   | 100                   | 14         | 0.064    | 0.216    | 1862                         |
| Six Point | 0                                              | 19                                                | 58                                                    | 23                                               | 89                                | 100                               | 100                                 | 5                  | 100                   | 100                   | 18         | 0.086    | 0.264    | 1785                         |
| Cortez II | 0                                              | 8                                                 | 62                                                    | 30                                               | 94                                | 100                               | 100                                 | 4                  | 100                   | 100                   | 25         | 0.155    | 0.345    | 2305                         |
| ATF804    | 0                                              | 3                                                 | 73                                                    | 24                                               | 94                                | 100                               | 100                                 | 6                  | 100                   | 100                   | 19         | 0.104    | 0.276    | 2487                         |
| Forté     | 0                                              | 6                                                 | 74                                                    | 20                                               | 99                                | 100                               | 100                                 | 6                  | 100                   | 100                   | 16         | 0.080    | 0.240    | 2711                         |
| Crewcut   | 0                                              | 11                                                | 66                                                    | 23                                               | 98                                | 100                               | 100                                 | 4                  | 100                   | 100                   | 23         | 0.138    | 0.322    | 2175                         |
| Rebel II  | 0                                              | 29                                                | 53                                                    | 18                                               | 93                                | 100                               | 100                                 | 4                  | 100                   | 100                   | 38         | 0.274    | 0.486    | 2486                         |
| KY-31     | 0                                              | 16                                                | 61                                                    | 23                                               | 93                                | 100                               | 100                                 | 3                  | 100                   | 100                   | 63         | 0.524    | 0.736    | 1813                         |
| LSD 0.05% |                                                |                                                   |                                                       |                                                  |                                   |                                   |                                     |                    |                       |                       |            |          |          |                              |

■ Cultivar under evaluation

■ Significant difference over two locations one year.

■ Significant difference over one location one year.

Measurements taken in Tallbot, Oregon

4 reps; 20 plants/rep = 80 data points

CI = Confidence Interval

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

# EXHIBIT E

## STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

## 1. NAME OF APPLICANT(S)

(at: 8/1/00) Rutgers, The State University of New Jersey  
Rutgers University - Cook College  
Cooke College of Technology

## 2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

F4

## 3. VARIETY NAME

Falcon IV

## 4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)

Foran Hall  
Plant Biology & Pathology Dept.  
59 Dudley Road  
New Brunswick, NJ 08901

## 5. TELEPHONE (include area code)

(732) 932 - 9711 ext. 160

## 6. FAX (include area code)

(732) 932 - 9441

## 7. PVPO NUMBER

2005 00 171

## 8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain.

☒ YES ☐ NO

## 9. Is the applicant (individual or company) a U.S. national or U.S. based company?

If no, give name of country

☒ YES ☐ NO

## 10. Is the applicant the original breeder? If no, please answer the following:

## a. If original rights to variety were owned by individual(s):

Is (are) the original breeder(s) a U.S. national(s)? If no give name of country

☒ YES ☐ NO

## b. If original rights to variety were owned by a company:

Is the original breeder(s) U.S. based company? If no give name of country

☒ YES ☐ NO

## 11. Additional explanation on ownership (If needed, use reverse for extra space):

## PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

- If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
- If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
- If the applicant is an owner who is not the original breeder, both the original breeder and the applicant must meet one of the above criteria.

The original breeder may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

Public reporting burden for this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter.

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U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705

EXHIBIT F  
DECLARATION REGARDING DEPOSIT

|                                                                                                                                                                  |                                                                                                                                                                                    |                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| NAME OF OWNER (S)<br>Rutgers, The State University of New Jersey                                                                                                 | ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country)<br>Foran Hall, Plant Biology & Pathology<br>59 Dudley Road, New Brunswick, NJ<br>New Brunswick, NJ 08901 | TEMPORARY OR EXPERIMENTAL DESIGNATION<br>F4               |
| NAME OF OWNER REPRESENTATIVE (S)<br>Dr. William Meyer<br>c/o Rutgers University<br>Plant Biology & Pathology<br>Dept., 59 Dudley Road<br>New Brunswick, NJ 08901 | ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country)                                                                                                          | VARIETY NAME<br>Falcon IV<br><br>PVPO NUMBER<br>200500171 |

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Signature

Date